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PSYCHOLOGY.¹

The Problem of Instinct.—The works of Prof. Lloyd and of Prof. Baldwin, which I have recently reviewed in these pages, deal more at length with this problem, but it seems worth while to add an account of a very interesting article which Louis Weber published in the January number of the “*Revue de Metaphysique et de Morale*,” pp. 27–59.

The word instinct may be taken in three quite distinct senses. In the first sense it is practically equivalent to animal mind or intelligence; in the second it denotes certain types of conduct, adapted to an end, constant throughout the individuals of a given species or race, and although constant, not dependent upon consciousness for their performance; in the third it denotes simply unconscious adaptation to an end—the instinctive act may be conscious but in that consciousness there must be no representation of the end to which it tends. The first is too vague, the second is arbitrary in that it involves the assumption of a precision that does not exist, the third is preferable to either of the others, for it embraces phenomena of widely different character and recognizes instinct as a phenomenon co-extensive with mentality. The facts accumulated by investigators in this field have been of little value to science for lack of approved methods of research and the theories based upon them stand in need of critical revision.

The difficulties of getting exact information upon these points are great. Unlike physical phenomena, mental phenomena are not objects of direct perception but must be inferred from external signs. In the process of inference many errors creep in, springing, in part, from theological or philosophical prejudices, and in part from our natural tendency to read our own experiences into the minds of the lower animals. Among the most misleading of the anthropocentric conceptions to which this tendency gives rise, is that of the scale of intelligence, in which the human mind has the first place, every other type of mind having its appropriate niche below it. “Thus, the conceptions of relative value, of degree, and of hierarchy are intruded into the study of phenomena which from their very nature cannot be brought under any scheme of classification based upon the notions of less or more.”

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Their points of difference are essentially qualitative and cannot be estimated as quantities or magnitudes.

One convenient method of avoiding such illegitimate interpretations is found in the careful study of the physiological conditions of consciousness. We are justified in assuming that sense organs of the same character mediate sensations of the same kind, and if we find any wide difference in the structure of the organs we must be cautious in our interpretations. It is probable, for example, that the conscious states mediated by the composite eye of the insect cannot be translated into any terms drawn from our visual consciousness. It follows, then, that to the bee or the fish, the hive and the water is not at all like that which we understand by those words. And the same is true even of that most general condition of all perception—space. It is probable that few animals have what we know as space, yet all probably have some analogue which bears to their total consciousness the relation that space bears to ours.

Similar inferences may be drawn with reference to common or bodily sensation. As it depends upon bodily structure we can scarcely suppose that the body of an insect yields a sensation-total to its possessor at all like that which our body yields us, and since emotions depend upon variations in the composition of this bodily sensation, we cannot assume that the ant, when he attacks or runs away from his enemy, experiences what we call fear or courage. Yet he experiences analogous emotions.

A careful description of the phenomena of organization and life from the biological or external point of view must, therefore, precede any attempt at an interpretation of their psychological significance, and, as the former has never been done, the attempts made at the latter are of little value. Especially must we discard the current antithesis between "human" and "animal" psychology. As there is no structure common to all "animals," so, too, is there no mind common to all animals. If we are to draw antitheses at all, it would be better to speak of the "insect mind," the "vertebrate mind," since the gulf between the human mind and that of other vertebrates is probably not as great as that between the mind of vertebrates and that of insects. We must, in other words, study morphological types of mind, just as we study similar types of body.

While the method above outlined has not been followed, and the nature of the sensibility of the lower animals has, in consequence, never been thoroughly understood, their acts have been very carefully studied. Unfortunately, the inquiry has been prosecuted from the

more complex to the more simple instead of in the reverse direction, and consequently we find the characteristics of the more complex types ascribed to the acts of animals in general. These traits are finality, or conduciveness to an end, uniformity, and automatic fatality. These, therefore, have been grouped together and termed instinctive, in the narrower sense of the word.

At this point philosophy stepped in and brought the problem into its present shape. The first of the three traits, conduciveness to an end, seems to show an affinity to intelligence; the other two, uniformity and automatic fatality, would put instinct in the same category with mechanisms. And the efforts at explanation proposed show the difficulty of reconciling these conceptions. Thus Hegel terms it an unconscious activity tending towards an end; Schopenhauer, the universal will not yet become clearly self-conscious; Hartmann, instinct is the Unconscious. Montaigne identifies it with intelligent reason, while Descartes claims that it has no mental existence whatever. The most interesting of these theories, however, are those which not only recognize the existence of mental elements in the instinctive act, but endeavor to determine their character. All agree in interpreting them, after the analogy of our own innate and habitual acts, as involving desires, appetites, a vague sense of discomfort, without clear consciousness of the end or volition to realize it, followed, when the end is gained, by subsidence of desire and a sense of comfort, repose, equilibrium. No detailed criticism of this interpretation is necessary; it is enough to say that it rests upon our own experience alone and must not be regarded as more than probably correct.

The above theories deal with the nature of instinct. When we turn to its mode of functioning, we find that the explanations proposed largely depend upon the theories formed of its nature. The only one that need engage our attention at present is that which explains instinct by the analogy of habit. Its functioning, then, depends upon the existence of certain preformed tendencies to act, ingrained in the nervous system of the animal; the start is given by appetite, blind impulse, the painful feeling that drives an organism to movement in conjunction with the external impressions which fire the mental mechanism. Thus, the instinctive act arises as the joint product of nervous organization and environment.

It is evident that this theory stands in need of some account of the manner in which the nervous organization has been got. The explanations proposed fall under three captions: those that ascribe the origin of instinct to more simple phenomena, explicable upon purely

mechanical principles; those that admit a mental source; and those that admit both. According to the first, instinct depends upon habit; according to the second, upon selection; according to the third, upon both. The common point of departure of all these theories is found in the generalization of habit and memory and their union in the conception of heredity. Habit is not limited to the individual but its results are inherited by descendants.

As the type of the mechanical theories, we may take that of Spencer. Instincts are due to complications of reflexes, and this complication is simply an illustration of the most general law of evolution, which involves progressive increase in heterogeneity and complexity of correspondence. But this is merely a statement of a fact and not an explanation of it. We wish to know the reason why, and the method in which this complication takes place.

The mental theories fall into two classes. The one, represented by that of Lewes, regards the instinct as a degraded form of intelligent act. This doctrine is discredited by the fact that it would require the parallel assumption that the nervous system of the lower animals is degraded from a more complex form capable of manifesting the higher forms of intelligence. The second class, represented by that of Fouillée, merely translates into mental terms Spencer's mechanical notions. Mind stuff takes the place of Force, but the details are essentially the same, and again the question arises, how and why can combinations of mind stuff bring about the new creations which we see?

None of these theories afford any true explanation of the phenomena. They bring to view the points of resemblance and difference between the instinct, the reflex and the voluntary act, but they do no more.

But the most interesting of the questions that arise in connection with instinct is that of its mode of development. For the solution of this problem we are indebted to Darwin, who has shown that it is due to variation and selection. Yet it should be noted that this does not reduce the development of instinct to a purely mechanical process, which was Spencer's error. The variations are not physical so much as mental, nor are they absolutely predetermined. The conditions that make them possible must be given, such as antecedent and concomitant mental states, but this does not determine their occurrence, since they may or may not occur. If they occur, the organism adapts itself to its environment and survives; if not, it does not adapt itself and becomes extinct. This introduces the last question to be considered, that is, what is the character of these mental variations that underlie the development of instinct?

In the human being we recognize as instinctive the impulsive acts, which fail to present any distinctively voluntary character. Some appear to spring from an unconscious or involuntary tendency, others exist as elements of which the actor has no knowledge, others seem to result from some innate predisposition. To this class a large majority of all our acts belong. When we come to examine it more closely we find that the class contains two groups: the one includes those acts which contain no new element, but are mere repetitions of former acts. These are our habits, innate predispositions, ordinary operations of intelligence, *a priori* intuitions of sense, *a priori* forms of the understanding, etc. All such processes have somewhat in common with instinct, and in common speech the word is often used of them. The other group, while closely akin to these, differs from them in that it contains a new element. Yet they have little in common with the clear volitions and deliberations with which we associate the notion of a new discovery. Few discoveries have, in fact, been so originated. They have rather been the results of a blind impulse, a feeling after the novel, which we can see throughout the animal world, and which has little in common with deliberate will. "Thus, when one says that the human mind has been shaped and enriched by discovery (*invention*), one means that all the modes in which its activity develops are not primary data, of extrinsic origin, but productions of that very activity. Discovery is then neither reason, liberty, religious faith nor conscience; it is not because we are reasonable, free, religious or moral, that we have so progressed and distanced the lower animals, but because we have discovered or created reason, liberty, religion and morality. Why? We do not know, and never shall know. How? It is for sociology and psychology to give us partial answers. Discovery is not an entity. Its concept resolves itself into that of the possibility of real action and of active mental change, and it simply indicates the point at which becoming takes the place of repetition."

The power of discovery is not peculiar to the human race. It requires no high degree of consciousness or power of reflection. It is a blind impulse, found in all animals and the new elements gained by it are concentered and amalgamated by habit and memory into what we see and call instincts.

Thus far, Weber. The affinity between his thought and that of Baldwin is evident; the two classes into which Weber divides the more vague acts, *habitudes* and *invention* are clearly equivalent to Baldwin's Habit and Accommodation. But Weber contents himself with a simple *nescio* at the very point upon which Baldwin has done the best work, that is, How is Accommodation possible?